

What is claimed is:

1. An image forming device comprising:

image data generation means for generating image data from original data;

5       compression determining means for determining whether or not the image data generated by the image data generating means is to be compressed;

10       compression means for compressing at least a part of the image data required to be compressed as determined by the compression determining means among the image data generated by the image data generation means;

15       memory means for storing a remaining part of the image data remained non-compressed as determined by the compression determining means and the part of the image data compressed by the compression means;

      decompressing means for decompressing the part of the image data compressed by the compression means and stored in the memory means;

20       a printing engine for forming an image on an image recording medium based on the image data; and

      transfer means for transferring the non-compressed image data stored in the memory means and the decompressed image data decompressed by the decompressing means to the printing engine, wherein the compression determining means determines  
25       necessity of data compression on a basis of the image data and

a data transferring performance from the memory means to the transfer means.

2. The image forming device as claimed in claim 1, wherein the original data are expressed in a page describing language and the image data comprise raster data.

3. The image forming device as claimed in claim 2, wherein the compression determining means employs a reference value indicative of the data transferring performance from the memory means to the transfer means.

4. The image forming device as claimed in claim 3, wherein the memory means has a memory region where the image data amounting at least one page is storable, and

wherein the compression determining means comprises: selection means for selecting a specific raster having the greatest raster length among rasters constituting the image data of the page; and judging means for judging whether or not data volume of the specific raster exceeds the reference value and determining compression with respect to all image data constituting the page if data volume of the specific raster exceed the reference value.

5. The image forming device as claimed in claim 3, wherein the compression determining means comprises:

comparing means for successively comparing each raster length of each raster constituting the image data with the reference value on a raster-by-raster basis; and

determining means for determining whether or not the image data are to be compressed if there is a raster whose raster length exceeds the reference value.

5       6. The image forming device as claimed in claim 5, wherein the memory means has a memory region where the image data amounting at least one page is storable, and

      wherein the compression determining means further comprises stopping means for stopping operation of the comparing means when a raster whose raster length exceeds the reference  
10       value is found, the determining means determining data compression with respect to all image data constituting the page as a result of stopping operation.

      7. The image forming device as claimed in claim 3, wherein the compression determining means comprises:

15       comparing means for successively comparing each raster length of each raster constituting the image data with the reference value on a raster-by-raster basis; and

      determining means for determining, on a raster-by-raster basis, a necessity of compression of the raster if raster  
20       length of the raster exceeds the reference value.

      8. The image forming device as claimed in claim 3, wherein the reference value represents a fixed length equal to or smaller than a value of the largest image forming width provided by the printing engine.

25       9. The image forming device as claimed in claim 8,

wherein the reference value represents a fixed length whose value is in a range from 70% to 90% of the largest image forming width of the printing engine.

10. The image forming device as claimed in claim 3,  
5 wherein the reference value represents a length corresponding to non-compressed and largest data volume transferable from the memory means to the transfer means within one raster image forming period defined with functions of a requested image forming speed and a resolution of the printing engine.

10 11. The image forming device as claimed in claim 1, wherein image data generated by the image data generation means comprise color data for performing color image printing based on the color data.

12. The image forming device as claimed in claim 1,  
15 wherein the printing engine comprises a conveyance section for conveying the image recording medium along a conveying route, a photosensitive body, an exposure section for forming an electrostatic latent image on the photosensitive body, a developing unit for developing the electrostatic latent image on  
20 the photosensitive body into a visible image, and a drive means for driving the conveyance section, the photosensitive body, the exposure section, and a developing unit,

and wherein the transfer means transferring the part of the image data and the remaining part of the image data to the  
25 exposure section, the part of the image data having been

stored in the compressed form in the memory means and decompressed by the decompressing means, and the remaining part of the image data being stored in non-compressed form in the memory means.

5           13. The image forming device as claimed in claim 12, wherein a plurality of combinations each including the photo-sensitive body, the exposure section, and the developing unit are arranged along the conveyance route for every color different from each other.

10           14. The image forming device as claimed in claim 2, wherein the printing engine comprises a laser engine including a laser scanner unit performing the scanning operation, the data of the raster being transferred from the transfer means to the laser engine on a raster-by-raster basis in synchronism  
15 with the scanning operation.

          15. The image forming device as claimed in claim 1, wherein the compression means compresses image data through one of run length coding, prediction coding, JBIG, bit plane conversion, prediction coding, block sorting, JPEG using a  
20 non-reversible compression DCT method, and wavelet conversion.

          16. An image forming method comprising the steps of:  
          generating image data from original data;  
          determining necessity of compression with respect to the image data generated in the generating step;  
25           compressing a part of the image data, the part being determined to be compressed in the determining step;

terminated to be compressed in the determining step;

storing in a memory section the part of the image data having been compressed in the compressing step and a remaining part of the image data remained non-compressed as a result of determination in the determining step;

decompressing the part of the image data having been compressed in the compression step and stored in the memory section; and

transferring, from a transfer section to a printing engine, the non-compressed remaining part of the image data stored in the memory section and the part of the image data decompressed in the decompressing step; wherein the determining step determines the necessity on a basis of the image data and data transferring performance from the memory section to the transfer section.